chronology by means of ancient eclipses, inequalities in the motions of many of the planets, the procession of the equinoxes, and the mutual perturbations of planets.

In 1919 he published a new solution of the problem of the tides. In the preface to his work he says:

> The cause of the tides was sufficiently and correctly explained by Sir Isaac Newton in the year 1687; and the mathematical development of the effects produced by that cause upon the waters of the ocean has been the great unsolved problem before the scientific world for more than 230 years.

Mr. Stockwell believed that he had solved this problem, and in his recent pamphlet he gives two different solutions and a set of tables of the solar and lunar tidal waves, together with the method of computing the tides at any point on the earth's surface.

In 1855 he was married to Sarah Healy, a foster-daughter of his uncle, and they lived together for over sixty-one years until she died, at the age of eighty-three. Their life together was an ideal one. Besides taking upon herself much of the burden of domestic cares in order that her husband might devote himself more fully to his scientific work, she sympathized fully with him in all that he was doing and gave him her encouragement.

Dr. Stockwell continued his mathematical work up to within three weeks of his death. Although he lived to be eighty-eight years of age, his mind was perfectly clear, and until attacked by his last illness, he was able to carry on his work with much of the vigor which had always characterized his investigations. Occasional visits by him to my office kept me in touch with what he was doing, and I was very glad to be able to loan him, from the college library, some books which he did not possess. He was a natural mathematician and acquired his knowledge without a teacher because his clear, analytical mind was able to grasp and understand any mathematical or astronomical theory which intereted him. The long list of his published papers shows that he was also possessed of that rare type of mind—the type which can work out for itself new things in mathematics and science which clearly interpret the great laws of our universe.

CHARLES S. HOWE

SCIENTIFIC EVENTS

CHAIR OF LOGIC AT THE UNIVERSITY OF LONDON

DR. C. A. MERCIER, the distinguished London alienist, in his will offered $100,000 to London University to endow a chair under stipulations, sent us by Dr. E. E. Slosson. They are:

Scheme for the establishment of a Professorial Chair of Rational Logic and Scientific Method. The purpose of this foundation is that students may be taught, not what Aristotle or any one else thought about reasoning, but how to think clearly and reason correctly; and to form opinions on rational grounds: the better to provide that the teaching shall be of this character, and shall not degenerate into the teaching of rigid formulæ and worn out superstitions, I make the following conditions:

The professor is to be chosen for his ability to think and reason and to teach, and not for his acquaintance with books on logic, or with the opinions of logicians or philosophers. Acquaintance with the Greek and German tongues is not to be an actual disqualification for the professorship, but in case the merits of the candidates appear in other respects approximately equal, preference is to be given first to him who knows neither Greek nor German; next, to him who knows Greek but not German; next, to him who knows German but not Greek; and last of all, to a candidate who knows both Greek and German.

The professor is not to devote more than one twelfth of his course of instruction to the logic of Aristotle and the schools, nor more than one twenty-fourth to the logic of Hegel and other Germans. He is to proceed upon the principle that the only way to acquire an art is by practising it under a competent instructor. Didactic inculcation is useless by itself. He is, therefore, to exercise his pupils in thinking, reasoning and scientific method as applied to other studies that the students are pursuing concurrently, and to other topics of living interest.

Epistemology and the rational grounds of opinion are to be taught. The students are to be prac-

tised in the arts of defining, classifying and the detection of fallacies and inconsistencies.

The principle of causation is to be taught as a process occurring in nature, and applicable to material things, and not as a notion in the minds of philosophers.

Subject to these requirements, a wide discretion is to be allowed to the lecturer.

COURSE ON SCIENCE AS APPLIED TO INDUSTRY

THE Sheffeld Scientific School at Yale University announces a new general course, to be given during sophomore and senior years on "Science as Applied to Industry" to be given next fall for the first time. The official pamphlet says:

> The object of this course is to give students a broad training, based upon a knowledge of certain of the fundamental sciences and of scientific methods, for executive and managerial positions in the business world. The course is not designed for students seeking preparation for a professional career in some particular branch of science, such as chemistry, geology, or metallurgy, where problems of production are likely to occupy their attention.

In accordance with the theory of the freshman year, this course may be chosen by any member of the first-year class. The best approach, however, is said to be by Group II. of that year, comprising English, history, mathematics, chemistry or physics, and French, German or Spanish. The electives come only in junior and senior years; and the student will find his work closely laid out for him until then. The sophomore will take calculus, physics, his chosen modern language, a course in contemparary English, qualitative analysis, and mineralogy and crystallography.

In junior year the student will take physical chemistry, physical and historical geology, elementary metallurgy, drawing, industrial mineralogy, business finance, elementary economics, and more of the same sort of English. He may also elect from elementary botany, biology, or modern language, sufficient hours to fulfill the required number. When he becomes a senior, he will take general chemistry, economic geology, statistics and reports, industrial management, principles of accounting, elementary petrology and applied structural geology, metals and alloys, industrial management, and cost analysis. For electives, he may choose from elementary organic chemistry, industrial chemistry, economic and regional geology, business law, insurance, metallurgy of iron and steel, transportation and economic problems. The total of recitation, lecture, laboratory work and preparation comes to forty-six hours in sophomore year, forty-five and one half hours in junior year, and forty-five hours in senior year.

The pamphlet explains that "while no attempt is made to cover the entire field of natural and physical science as a foundation for the more practical business studies which form in the last two years an integral part of the course, attention is centered upon three branches of science, those of chemistry, geology, and metallurgy, the work in these sciences being so arranged that the natural and logical order of development is followed, covering in some cases four years of work in a single field. The scientific studies are supplemented in each of the years by general or cultural studies in English or modern language, and in junior and senior years by the study of economics, and of selected subjects within the general field of business administration."

STANDARDIZATION OF INDUSTRIAL LABORATORY APPARATUS

The Journal of Industrial and Engineering Chemistry states that through the efforts of certain apparatus manufacturers, there met informally at the Chemists' Club, New York City, representatives of the following companies to discuss the advisability of drawing up standard specifications for laboratory apparatus to be used in their industrial research and works control laboratories: Barrett Company, General Chemical Company, Atmospheric Nitrogen Corporation, Grasselli Chemical Company, National Aniline & Chemical Company, New Jersey Zinc Company, Solvay Process Company, Standard Oil Company of New Jersey, and E. I. du Pont de Nemours & Company.